

REMARKS

By the present Amendment, claim 11 is amended. This leaves claims 11-18 pending in the application, with claim 11 being independent.

Claim 1 is amended to recite more expressly that the exposed surfaces which are coated are those surfaces formed by the dividing of the carrier body. This limitation of coating those specific surfaces was recited in originally presented claim 11 by the recitation of "the exposed surfaces" in the penultimate line of that claim, when read with lines 6-7 providing the sole antecedent bases for that quoted recitation. Since the above amendment to claim 11 does not further limit the claim and does not raise a new issue requiring further consideration or search, the amendment should be entered and considered, even though presented after final rejection.

Rejections Under 35 U.S.C. §§ 102 and 103

Claim 1 covers a process for producing a flat commutator comprising forming a metal carrier with segment support parts and a hub of electrically insulating material coupled to the carrier body. An annular disk is joined in an electrically conductive and strong mechanical manner to the carrier body on its side opposite the hub, with the annular disk being resistive to a reactive environment. The carrier body is divided to separate the segment support parts and to form exposed surfaces of the segment support parts by the separation. The annular disk is divided into annular segments. The exposed surfaces of the segment support parts, which exposed surfaces are formed by the dividing of the carrier body, are coated with an environment resistant coating by currentless deposition carried out from a solution or a suspension.

By forming the method in this manner, the method can be performed economically and will produce a superior product.

Claims 11-16 stand rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,157,299 to Garlach. The Garlach patent is cited for allegedly disclosing a method of producing a flat commutator involving forming a metal carrier body with segment support parts, providing a hub with insulative material or plastic, joining an annular plate of a carbon disk that is metal coated for conductivity and strength to operate in a hostile or aggressive environment, dividing the carrier body and annular disk into annular segment parts and supporting parts, and coating exposed or selected areas of the segment to the harsh environment by a resistant material or plastic which is a currentless deposition. Additionally, the Garlach patent is cited for allegedly disclosing the cutting of the combination of the annular plate and plastic hub into segments.

The Garlach patent does not anticipate or render obvious the subject matter of claim 11 since it does not disclose or render obvious the forming of exposed surfaces on the segment support parts by the dividing of the carrier body, in combination with the coating of those exposed surfaces on the carrier body as recited in claim 11. Additionally, the Garlach patent does not anticipate or render obvious a currentless deposition of the coating, and more particularly, does not disclose or render obvious the current deposition of the coating from a solution or a suspension as defined in claim 11. The recitation of the currentless deposition being "carrier out from one of a solution and a suspension" is not treated in the Office Action.

The Gerlach patent does not disclose "formation of exposed surfaces of the segment support parts" when the carrier body is divided to separate the segment support parts. As clearly stated in column 2, lines 4 to 9:

"According to the present invention the side surfaces of directly adjacent carbon segment-supporting parts face one another and are covered completely by the moldable plastic compound constituent of the hub body. Thus, no excavation of the material of the segment-supporting parts can occur in this area..."

See also column 5, lines 36 to 46, of the Gerlach patent.

Further, in column 2, lines 9-15, the Gerlach patent states that

"...care need be taken only that the other areas of the second-supporting parts which are covered neither by the carbon segments nor by the hub bodies are protected from contact with the aggressive environment. Such protection can be attained for instance by coating the surfaces with a resistant metal or a plastic."

However, a substantial difference exists between coated surfaces of the Gerlach patent and the claimed exposed surfaces of the segment support part formed by separation of the segment support part. The articles produced according to the Gerlach patent provide a coating of the "other areas" by the plastic material of the hub body as described in the Gerlach patent and as illustrated in Fig. 2 of the Gerlach patent as well as in the first two photographs (photo 1 and photo 2) of attached Annex A of a corresponding article produced according to the Gerlach patent. Photo 1 of annex A represents a cross section of the structure shown in Fig. 1 of the Gerlach patent. In photo 1 the cut dividing the annular disk 1 of carbon provides an air gap 6. The air gap 6 does not divide the carrier body to separate the segment support parts 2 of copper, since the segment support parts 2 are already divided. Furthermore, the cut forming the air gap 6 extends in the hub body 4 portion only, such that no exposed surfaces of the segment support parts 2 are formed according to the Gerlach patent. Similarly in photo 2 the radially oriented cuts form the air gaps 6 extending only in the hub body 4, but do not form any exposed surfaces of the segment support parts 2 of copper.

Attached annex B shows two photographs (photo 3 and photo 4) of an article made according to the present claimed process and corresponding to Fig. 5 (photo 3) and Fig. 4 (photo 4) of the present application. As can be seen particularly from photo 3, the cut for dividing the annular disc 2 of carbon also divides the carrier body of copper to separate the segment support parts 4 and to form exposed surfaces 14 of the segment support parts 4 which has to be subsequently coated.

Relative to the Garlach patent embodiment of Figure 3, as described in column 5, lines 59-62, an air gap 6 penetrates into moldable plastic filling the intermediate clearance between the side surfaces 2' of the segment supporting parts 2. In this manner, the plastic of the hub covers these surfaces, not a coating. Additionally, the surfaces are not provided by dividing the carrier body to separate the segment support parts.

Similarly, as illustrated in Garlach patent Figure 3 and described in column 8, lines 16-23, the moldable plastic compound is between the side surfaces 202' of the carbon segment-supporting parts 202. Thus, the hub material covers the sides of the segment support parts, not a coating.

Further, the lack of any description of a currentless deposition or of a currentless deposition from a solution or a suspension in the Garlach patent prevents the Garlach patent from anticipating or rendering obvious the subject matter of claim 11. Relative to this feature, column 2, lines 10-15, of the Gerlach patent is cited. This portion of the patent merely discloses coating the surface of the "other areas" with a resistant metal or a plastic. Such Gerlach patent disclosure is not of a currentless deposition carried out from a solution or suspension, as recited in claim 11.

No evidence of record or argument is presented demonstrating that the Gerlach "coating" is a currentless deposition from a solution or suspension.

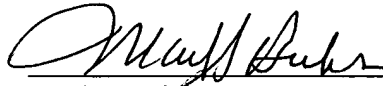
Claims 12-18, being dependent upon claim 11, are also allowable for the above reasons. Moreover, these dependent claims recite additional features further distinguishing them over the cited patents. Specifically, the carbon disk of claim 12, the division of the carrier body after joining with the annular disk of claim 13, the one step division of the carrier body and the annular disk of claim 14, the combination cut by abrasive cutting or sawing of claim 15, the selective coating of only the exposed surfaces of the segment support parts of claim 16, the coating of tin, silver or chromium of claim 17, and the coating thickness of claim 18, are not anticipated or rendered obvious by the cited patents, particularly within the overall claim combination.

Relative to claims 17 and 18, U.S. Patent No. 6,080,497 to Carey is cited. The Carey patent is cited for applying a coating of tin alloy having a thickness greater than 0.0001 inch (2.5 micrometers) for corrosion protection. In support of this rejection, it is alleged that it would be obvious to provide the Carey coating in the Gerlach method. However, the Carey patent does not cure the deficiencies relative to the lack of currentless deposition from a solution or suspension to provide a coating on surfaces exposed by the division of the carrier as required in claim 11.

Accordingly, claims 11-18 are allowable. Prompt and favorable action is solicited.

Respectfully submitted,

Dated: Jan 30, 2004

A handwritten signature in dark ink, appearing to read "Mark S. Bicks", written over a horizontal line.

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